

Appendix K

Environmental Regulations, Orders, Standards, and Permits

Table K-1
Department of Energy Radiation Protection Standards
and Derived Concentration Guides ¹

Effective Dose Equivalent Radiation Standard for Protection of the Public

Continuous exposure of any member of the public from routine activities:
All exposure pathways: 100 mrem/year (1 mSv/yr) effective dose equivalent

Department of Energy Derived Concentration Guides (DCGs) for
Inhaled Air or Ingested Water ($\mu\text{Ci/mL}$)

<i>Radionuclide</i>	<i>Half-life²</i> <i>(years)</i>	<i>In Air</i>	<i>In Water</i>	<i>Radionuclide</i>	<i>Half-life²</i> <i>(years)</i>	<i>In Air</i>	<i>In Water</i>
H-3*	1.23E+01	1E-07	2E-03	Eu-152	1.36E+01	5E-11	2E-05
C-14*	5.73E+03	6E-09	7E-05	Eu-154*	8.80E+00	5E-11	2E-05
K-40	1.28E+09	9E-10	7E-06	Eu-155	4.96E+00	3E-10	1E-04
Fe-55	2.70E+00	5E-09	2E-04	Th-232	1.40E+10	7E-15	5E-08
Co-60*	5.27E+00	8E-11	5E-06	U-232*	7.20E+01	2E-14	1E-07
Ni-59	7.50E+04	4E-09	7E-04	U-233*	1.59E+05	9E-14	5E-07
Ni-63	1.00E+02	2E-09	3E-04	U-234*	2.44E+05	9E-14	5E-07
Sr-90*	2.86E+01	9E-12	1E-06	U-235*	7.04E+08	1E-13	6E-07
Y-90	7.31E-03	1E-09	1E-05	U-236*	2.34E+07	1E-13	5E-07
Zr-93	1.53E+06	4E-11	9E-05	U-238*	4.47E+09	1E-13	6E-07
Nb-93m	1.46E+01	4E-10	3E-04	Np-239	6.45E-03	5E-09	5E-05
Tc-99*	2.13E+05	2E-09	1E-04	Pu-238*	8.78E+01	3E-14	4E-08
Ru-106	1.01E+00	3E-11	6E-06	Pu-239*	2.41E+04	2E-14	3E-08
Cd-113m	1.37E+01	8E-12	9E-07	Pu-240*	6.57E+03	2E-14	3E-08
Sn-126	1.00E+05	1E-10	8E-06	Pu-241	1.44E+01	1E-12	2E-06
Sb-125	2.77E+00	1E-09	5E-05	Am-241*	4.32E+02	2E-14	3E-08
Te-125m	1.59E-01	2E-09	4E-05	Am-242m	1.52E+02	2E-14	3E-08
I-129*	1.57E+07	7E-11	5E-07	Am-243	7.38E+03	2E-14	3E-08
Cs-134*	2.06E+00	2E-10	2E-06	Cm-243	2.85E+01	3E-14	5E-08
Cs-135	2.30E+06	3E-09	2E-05	Cm-244	1.81E+01	4E-14	6E-08
Cs-137*	3.02E+01	4E-10	3E-06	Gross Alpha	<i>NA</i>	2E-14	3E-08
Pm-147	2.62E+00	3E-10	1E-04	(as Am-241)			
Sm-151	9.00E+01	4E-10	4E-04	Gross Beta	<i>NA</i>	9E-12	1E-06
				(as Sr-90)			

¹ DOE Order 5400.5 (February 8, 1990). Effective May 8, 1990. (See Derived Concentration Guides, p. 1-5, in Chapter 1, Environmental Monitoring Information.)

² U.S. Department of Energy. 1981. Radioactive Decay Tables. Washington, D.C.: Technical Information Center, U.S. Department of Energy.

* Radionuclides measured in WVDP effluent.

NA - Not applicable.

Table K - 2

Environmental Regulations, Orders, and Standards

The following environmental standards and laws are applicable, in whole or in part, to the West Valley Demonstration Project:

Atomic Energy Act of 1954, 42 USC§ 2011 *et seq.*

DOE Order 231.1, September 30, 1995. ***Environment, Safety, and Health Reporting***, including Change 2 (November 7, 1996).

DOE Order 232.1A, August 1, 1997. ***Occurrence Reporting and Processing of Operations Information***.

DOE Order 5400.1, November 9, 1988. ***General Environmental Protection Program***, including Change 1 (June 29, 1990).

DOE Order 5480.1B, September 23, 1986. ***Environment, Safety, and Health Program for DOE Operations***, including Change 5 (May 10, 1993).

DOE Order 5484.1, February 24, 1981. ***Environmental Protection, Safety, and Health Protection Information Reporting Requirements***, including Change 7 (October 17, 1990).

DOE Regulatory Guide DOE/EH-0173T, January 1991. ***Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance***.

Clean Air Act (CAA). Pub. L. No. 84-159. 42 USC§ 7401 *et seq.* , as amended, and implementing regulations.

Federal Water Pollution Control Act [Clean Water Act (CWA)]. Pub. L. No. 95-217. 33 USC §1251 *et seq.* , as amended, and implementing regulations.

Resource Conservation and Recovery Act (RCRA). Pub. L. No. 94-580. 42 USC §6901 *et seq.* , as amended, and implementing regulations.

National Environmental Policy Act (NEPA) of 1969. Pub. L. No. 91-190. 42 USC §4321 *et seq.* , as amended, and implementing regulations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Pub. L. No. 96-510. 42 USC §9601 *et seq.* (including Superfund Amendments and Reauthorization Act of 1986), and implementing regulations.

Toxic Substances Control Act (TSCA). Pub. L. No. 94-469. 15 USC §2601 *et seq.* , as amended, and implementing regulations.

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. Pub. L. No. 99-499. 42 USC §11001 *et seq.* , and implementing regulations.

Safe Drinking Water Act (SDWA). Pub. L. No. 93-523. 42 USC §300f *et seq.* , as amended, and implementing regulations.

Environmental Conservation Law of New York State and implementing regulations (NYCRR).

The standards and guidelines applicable to releases of radionuclides from the West Valley Demonstration Project are found in DOE Order 5400.5 (February 8, 1990), including Change 2 (January 7, 1993).

Water quality standards contained in the State Pollutant Discharge Elimination System (SPDES) permit issued for the facility are listed in Table G-1. Airborne emissions are regulated by the Environmental Protection Agency under the National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR §61 Subpart H (December 15, 1989).

The above list covers the major activities at the West Valley Demonstration Project but does not constitute a comprehensive enumeration.

Table K-3
West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Permit Type	Description	1998 Changes	Status
West Valley Demonstration Project Part A Permit Application	NYSDEC	Provides Interim Status under RCRA for treatment and storage of hazardous waste	None	No expiration date.
Article 19 Air State Facility Permit 90422-00005	NYSDEC	Includes 2 new boilers that began operation in 1998	Several sources removed from Modification Application because of exempt status; WVDP awaiting approval	Effective 1/23/98. Modification Application to incorporate remaining COs submitted 12/31/97
Boilers (042200-0114-00002 and (042200-0114-00003)	NYSDEC/ Certificate to Operate (CO) and Air Emission Source (2 COs)	Old boilers in utility room - backup for new boilers. Existing permit includes two boilers installed in 1997.	None	COs issued 11/30/90. No expiration date. Extended indefinitely in accordance with revised Title 6 NYCRR § 201, which went into effect 7/7/96.
Cold chemical solids transfer system (042200-0114-CTS02) Cold chemical vessel vent system (042200-0114-CTS03) Cold chemical vessel dust collection hood (042200-0114-CTS04)	NYSDEC/CO (3 COs)	Cold chemical facility. Dry or solid chemical emissions from solids transfer system and dust collection hood and from mix-tank vent for vitrification operations.	None	Solids transfer system CO (-CTS02) and vessel dust collection hood CO (-CTS04) issued 1/8/92. Vessel vent system CO (-CTS03) issued 10/26/95. No expiration date. Extended indefinitely in accordance with revised 6 NYCRR § 201.
Vitrification facility heating, ventilation, and air conditioning (HVAC) system (042200-0114-15F-2)	NYSDEC/CO	Canister-welding emissions vented through vitrification facility HVAC system, i.e., canister-welding ventilation	None	CO issued 10/26/95. No expiration date. Extended indefinitely in accordance with revised 6 NYCRR § 201.
Vitrification off-gas treatment system (04220-0114-15F-1)	NYSDEC/CO	Vitrification facility off-gas treatment system emissions	None	CO issued 5/2/97. No expiration date. Extended indefinitely in accordance with revised 6 NYCRR § 201
Slurry-fed ceramic melter (modification to WVDP-687-01) Process building ventilation	EPA/NESHAP	Slurry-fed ceramic melter radionuclide emissions - main plant stack modified 2/18/97	None	Permit approved February 18, 1997. No expiration date.
Vitrification facility HVAC system	EPA/NESHAP	Vitrification facility HVAC system for radionuclide emissions	None	Permit approved February 18, 1997. No expiration date.
01-14 building ventilation system (WVDP-187-01)	EPA/NESHAP	Liquid waste treatment system ventilation of radionuclide emissions in the 01-14 building	None	Issued 10/5/87. Modified 5/25/89. No expiration date.
Contact size-reduction facility (WVDP-287-01)	EPA/NESHAP	Contact size-reduction and decontamination facility radionuclide emissions	None	Issued 10/5/87. No expiration date.

Table K-3 (concluded)
West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Permit Type	Description	1998 Changes	Status
Supernatant treatment system/Permanent Ventilation System (WVDP-387-01)	EPA/NESHAP	Supernatant treatment system ventilation for radionuclide emissions	Modified to accommodate waste tank ventilation	Revised 1/1/97. No expiration date.
Low-level waste supercompactor (WVDP-487-01)	EPA/NESHAP	Low-level waste supercompactor ventilation system for radionuclide emissions	Cancelled	Issued 10/5/87. Supercompactor shipped to Savannah River site.
Outdoor ventilated enclosures (WVDP-587-01)	EPA/NESHAP	Ten portable ventilation units for removal of radionuclides	None	Issued 12/22/87. No expiration date.
State Pollutant Discharge Elimination System (NY-0000973)	NYSDEC/ Water discharge	Covers discharges to surface waters from various sources on-site	Renewed effective 2/1/99. Expires 2/1/04. No other changes.	NYSDEC has prepared a draft permit modification for storm water discharges and for a groundwater recovery system discharge increase. Permit terms for NYSDERDA and DOE responsibilities related to storm water discharges are being negotiated with NYSDEC.
Buffalo Pollutant Discharge Elimination System (98-04-TR096)	Buffalo Sewer Authority/ Sanitary sewage and sewage sludge disposal	Permit issued to hauler of waste from the wastewater treatment facility	Renewed 6/5/98	Hauler must renew permit by 6/30/99.
Chemical bulk storage (9-000158)	NYSDEC/ Chemical bulk storage tank registration	Registration of bulk storage tanks used for listed hazardous chemicals	None	Registration expires 7/5/99. Will renew before expiration.
Petroleum bulk storage (9-008885)	NYSDEC/ Petroleum bulk storage tank registration	Registration of bulk storage tanks used for petroleum	None	Registration expires 9/2/01. Will renew before expiration.
Bird depredation license	New York State Division of Fish and Wildlife	State license for the removal of inactive nests of migratory birds	The WVDP is no longer required to file for a U.S. Fish and Wildlife permit for these activities.	State license for CY 1998 expired 12/31/98. CY 1999 license expires 12/31/99.